

CLAIMS

I claim:

1. A vending machine, comprising:

5 (a) an upstanding base housing defining a hollow interior chamber;

(b) a top platform mounted on said base housing and having a central opening defined therein and a radial opening also defined therein extending radially outward of and spaced from said central opening;

10 (c) a storage magazine mounted above said top platform and said base housing and having an outer annular row of vertical cavities for receiving and holding in stacked fashion small packages of items to be dispensed from said machine one at a time from a lower opening of a selected one of said
15 vertical cavities;

(d) an outer enclosure mounted on said top platform and surrounding said storage magazine and adapted to be manually rotated by a user;

20 (e) a top cover removably mounted on an upper end of said outer enclosure so as to overlie and close upper openings of said vertical cavities of said magazine and interfit with said outer enclosure such that said top cover will rotate with said outer enclosure when said outer enclosure is manually rotated by a user;

25 (f) a coupling subassembly disposed centrally through said magazine and through said central opening of said top platform and supported by said top platform from below said top platform and coupling said storage magazine with said top cover and rotatably mounting said storage magazine and said
30 top cover and outer enclosure therewith as a unit for undergoing rotation relative to said top platform and said base housing for disposing the selected one of said cavities over said radial opening of said top platform;

(g) a coin-operated dispensing mechanism mounted on said

base housing and disposed in the interior chamber thereof and being operable in response to a coin being deposited therein to enable dispensing of one lowermost package of items at a time from the selected one of said cavities overlying said radial opening in said top platform; and

(h) a coin collection station mounted on said base housing and extending into said hollow interior chamber thereof below said coin-operated dispensing mechanism for receiving therefrom the coin deposited therein to cause operation of said dispensing mechanism to dispensed the one lowermost package of items.

2. The vending machine of claim 1 wherein said storage magazine includes:

an outer wall of generally annular configuration;
an inner wall of generally annular configuration disposed within and spaced from said outer wall; and

a plurality of partitions disposed between and rigidly attached to the outer and inner walls and extending generally radially outward with respect to a central longitudinal axis of said storage magazine such that said partitions are circumferentially spaced apart from one another so as to form with said outer and inner walls a plurality of said elongated vertical cavities open at said upper and lower ends and being spaced apart from one another and arranged in an annular row circumferentially extending around, above and adjacent to an outer portion of said top platform.

3. The vending machine of claim 1 further comprising:

a plurality of seats recessed in a top surface of said top platform at respective locations radially spaced outwardly from and circumferentially spaced about said central opening in said top platform; and

a set of ball bearings each disposed in one of said seats recessed in said top platform so as to rotatably support

said magazine relative to said top platform.

4. The vending machine of claim 1 wherein said coupling subassembly includes:

5 elongated hollow rigid tube extending centrally through said magazine and supported at a lower end by a bottom portion of said magazine and engaged at an upper end with said top cover;

a bearing support bracket supported by said top platform below said central opening therein;

10 a bottom bearing ring disposed below said central opening of said top platform and having a first bearing component fixedly mounted to said bearing support bracket and a second bearing component rotatably coupled to said first bearing component;

15 an elongated rigid rod extending through said rigid tube and said bearing support bracket between and attached at opposite upper and lower ends of said rigid rod respective to said top cover and said second bearing component; and

20 a key-operated lock device capable of being releasably tightened onto from said upper end of said rigid rod so as to releasably clamp said rigid tube between said top cover and said storage magazine such that said top cover, said magazine and said lower bearing component function as a single unit rotatably mounted upon said top platform for undergoing
25 rotation relative to said top platform and said base housing by a user manually gripping opposite sides of said outer enclosure and turning said outer enclosure in a predetermined angular direction.

5. The vending machine of claim 4 further comprising:

30 a plurality of seats recessed in a top surface of said top platform at respective locations radially spaced outwardly from and circumferentially spaced about said central opening in said top platform; and

a set of ball bearings each disposed in one of said seats recessed in said top platform so as to rotatably support said magazine relative to said top platform.

5 6. The vending machine of claim 1 wherein said coin-operated dispensing mechanism includes a rotatable drum disposed in said interior chamber of said base housing below said top platform and having an outer cylindrical surface and a recess defined in said outer surface adapted to receive the one lowermost package through said radial opening of said top
10 platform during rotation of said drum in a predetermined direction through a single dispensing cycle in which said recess, initially empty, is moved from an initial three o'clock position to an intermediate twelve o'clock position where said recess receives the one package, and finally back
15 to said initial three o'clock position, where the package will then drop away from said recess of said drum to a discharge station of said machine.

20 7. The vending machine of claim 6 wherein said recess defined in said outer surface of said drum is of a reversed L-shaped wedge configuration.

25 8. The vending machine of claim 6 further comprising:
a reciprocal locking mechanism disposed in said interior chamber of said base housing and mounted to a bottom surface of said top platform, said locking mechanism being capable of
coacting with said rotatable drum of said dispensing mechanism to lock said magazine in a stationary position when a
lowermost package is received in said dispensing mechanism from the selected one of said cavities.

30 9. The vending machine of claim 1 further comprising:
a one-way indexing mechanism disposed in said interior chamber of said base housing and mounted to a bottom surface

of said top platform, said indexing mechanism being capable of coacting through a hole in said top platform and with said magazine so as to limit rotation of said magazine and said top cover and outer enclosure therewith through a succession of
5 incremental steps relative to said top platform and said base housing.

10. The vending machine of claim 9 wherein said one-way indexing mechanism includes:

an annular row of one-way teeth disposed in a bottom of
10 said magazine with one of said teeth at a time being alignable over said hole in said top platform;

a plunger mounting bracket fixedly attached to said bottom surface of said top platform

a plunger mounted by said plunger mounting bracket for
15 undergoing reciprocal movement within said hole in said top platform and toward and away from said one of said teeth to engage with and disengage from said one of said teeth such that said magazine and said top cover and outer enclosure therewith are only allowed to rotatably move through said
20 incremental steps in one predetermined angular direction relative to said top platform.

11. The vending machine of claim 1 further comprising:

a reciprocal locking mechanism disposed in said interior chamber of said base housing and mounted to a bottom surface
25 of said top platform, said locking mechanism being capable of coacting with said dispensing mechanism to lock said magazine in a stationary position when a lowermost package is received in said dispensing mechanism from the selected one of said cavities.

30 12. The vending machine of claim 11 wherein said reciprocal locking mechanism includes:

an annular row of spaced apart apertures defined in a

bottom of said magazine such that a given one of said apertures at a time is alignable with a hole in said top platform;

5 a pin mounting bracket fixedly attached to a bottom surface of said top platform in alignment with said hole in said top platform;

10 an elongated locking pin reciprocally mounted by said pin mounting bracket and extending into said hole in said top platform for undergoing reciprocal movement toward and away from said given one of said apertures in said magazine aligned above said hole in said top platform such that said locking pin can be correspondingly extended through and retracted from said aligned one of said apertures for correspondingly locking said magazine from undergoing and enabling said magazine to
15 undergo rotation relative to said top platform.

13. The vending machine of claim 12 wherein said coin-operated dispensing mechanism includes a rotatable drum disposed in said interior chamber of said base housing below said top platform and rotatable in a predetermined direction
20 through a single dispensing cycle of operation, said drum having an element thereon for actuating said locking pin of said reciprocal locking mechanism to extend into and retract from said aligned aperture in said magazine as said drum rotates through one cycle of operation of said dispensing
25 mechanism.

14. The vending machine of claim 12 wherein said coin-operated dispensing mechanism includes a rotatable drum disposed in said interior chamber of said base housing below said top platform and having an outer cylindrical surface and
30 a recess defined in said outer surface adapted to receive the one lowermost package through said radial opening of said top platform during rotation of said drum in a predetermined direction through a single dispensing cycle in which said

recess, initially empty, is moved from an initial three o'clock position to an intermediate twelve o'clock position where said recess receives the one package, and finally back to said initial three o'clock position, where the package will
5 then drop away from said recess of said drum to a discharge station of said machine, said drum having an element thereon for actuating said locking pin of said reciprocal locking mechanism to extend into and retract from said aligned aperture in said magazine as said drum rotates through one
10 cycle of operation of said dispensing mechanism.